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Worksheet 1. Contact and Methyl Bromide Request Information

The following information will be used to determine the amount of methyl bromide requested and the contact person for this request. It is important that we know whom to contact in case we need additional information during the review of the application.

1. **Location**
(Enter the state, region, or county. Provide more detail about the location if relevant to the feasibility of alternatives to methyl bromide.)

California

2. **Crop/commodity**
(Include all crops/commodities that benefit from the application of methyl bromide in a fumigation cycle. A fumigation cycle is the period of time between methyl bromide fumigations.)

Sweetpotato

3. **Climate**
(Individual users should enter their climate zone designation by reviewing the U.S. climate zone map. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each climate zone. This map is located at the end of this workbook or it can be reviewed online at http://www.usna.usda.gov/ Hardzone/ushzmap.html).

9a

4. **Soil type** Check the box(es) for the soil types and percent organic matter that apply to your area. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each soil type.

Soil Type:	**Light**	**x**	**Medium**		**Heavy**		
Organic Matter:	**0 to 2%**	**x**	**2 to 5 %**		**over 5%**		

5. **Other geographic factors that may affect crop/commodity yield (e.g., water table).**

6. **Consortium name** Sweet Potato Council of California — **Specialty (check one)**
7. **Contact name** Bob Weimer — agronomic X
8. **Address** PO Box 366 — economic
Livingston, CA 95334
9. **Daytime phone** 209 358-1685 — **10. FAX** 209 358-2750
11. **E-mail** weimer@elite.net

List an additional contact person if available. — **Specialty (check one)**

12. **Contact name** — agronomic
13. **Address** — economic
14. **Daytime phone** — **15. FAX**
16. **E-mail**

Worksheet 1. Contact and Methyl Bromide Request Information

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17. How much active ingredient (ai) of methyl bromide are you requesting for 2005? 495,000 **lbs.**

If a consortium is submitting this application, the data for question 17 and 17a. should be the total for the consortium.

In the question below, area is defined as follows for each user: acres for growers, cubic feet for post harvest operations, and square feet for structural applications.

17a. How much area will this be applied to? Please list units. 3,000 Acres **units**

18. Are you requesting methyl bromide for additional years beyond 2005? **Yes** X **No** ____

18a. If yes, please list year and quantity active ingredient (ai) of methyl bromide requested in the table below and explain why you need authorization for multiple years.

Continued use requested until viable alternatives are available

If a consortium is submitting this application, the data below should be the total for the consortium.

In the table below, **area is defined** as follows for each user: acres for growers, cubic feet for post harvest operations, and square feet for structural applications.

Year	Quantity ai (lb.) of Methyl Bromide	Area to be Treated	Unit of Area Treated
2006	495,000	3,000 Acres	165 lb. ai/acre
2007	495,000	3,000 Acres	165 lb. ai/acre

19. Target Pest(s) or Pest Problem(s):
(Be as specific as possible about the species or classes of pests relevant to the feasibility of alternatives.)

Root Knot Nematode (Meloidogyne spp.) - Primary Target

20. If applying as a consortium for many users of methyl bromide, please define a *representative user*. Define exactly, issues such as size of the operation (acres treated with methyl bromide for growers, cubic feet for post-harvest operations, and square feet for structural applications), whether the representative user owns or rents the land or operation, intensity of methyl bromide use (treat regularly or only when pest reaches a threshold), pest pressure, etc.

Average size farm is about 100 acres with the majority of sweetpotato produced on leased property. Fumigation occurs on 65 - 70% of acreage.

20a. Explain why this user represents the typical user in the consortium.

California sweetpotato production is localized primarily in two adjacent counties in the Central Valley, with the greatest productio occuring in Merced County. MeBr users are therefore a very homogenous population with no major differences.

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Worksheet 2-A. Methyl Bromide - Use 1997-2000

If a consortium is submitting this application, all data should reflect the **actual** data for the consortium.

Col A: Formulation of Methyl Bromide	Enter the appropriate data in Col B-M for each formulation, if known, and/or the totals and averages for all formulations. If you enter only the total and averages for all formulations in the last row of the table, please describe in the comments section the formulations typically used, or the approximate proportions of the formulations used.
Col B, E, H, K: Actual Area Treated	Enter the total actual area treated. Note: This number should be the total actual area treated by the individual user or total actual area for the entire consortium, for the year indicated.
Col C, F, I, L: Actual Total lbs. ai of Methyl Bromide Applied	Enter the actual total pounds active ingredient (ai) of methyl bromide applied. Note: This number should be the total pounds ai applied by the individual user or the entire consortium, for the year indicated.
Col D, G, J, M: Actual Average lbs. ai Applied per Area	The average application rates in pounds ai of methyl bromide per area are automatically calculated from the previous 2 columns.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Formulation of Methyl Bromide	**1997**			**1998**			**1999**			**2000**		
	Total Actual Area Treated	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**	**Total Actual Area Treated**	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**	**Total Actual Area Treated**	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**	**Total Actual Area Treated**	**Actual Total lbs. ai of Methyl Bromide Applied**	**Average lbs. ai Applied per Area**
over 95% methyl bromide	5,500	766,041	139.280182	4,000	541,923	135.48075	3,000	445,731	148.577	2,308	338,469	146.650347
75% methyl bromide, 25% chloropicrin	0	0	0	0	0	0	0	0	0	0	0	0
67% methyl bromide, 33% chloropicrin	0	0	0	0	0	0	0	0	0	0	0	0
50% methyl bromide, 50% chloropicrin	0	0	0	0	0	0	0	0	0	0	0	0
__% methyl bromide, __% chloropicrin	0	0	0	0	0	0	0	0	0	0	0	0
__% methyl bromide, __% chloropicrin	0	0	0	0	0	0	0	0	0	0	0	0
All formulations of methyl bromide			139.280182			135.48075			148.577			146.650347

Comments:

Source: CDPR Pesticide Use Report.
Typical use rate ranges from 150 - 175 lbs. ai/acre.
Use declined due to cost increases of MeBr and due to efforts to implement alternatives.

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Worksheet 2-B. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 1997-2000

If a consortium is submitting this application, the data for this table should reflect the **actual averages** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 1997 - 2000 when using methyl bromide. Post-harvest and structural users may work with EPA to modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Year	Be sure to enter the year. Use as many rows as needed for each year for all the crops/commodities in the fumigation cycles from 1997 to 2000. If a fumigation cycle overlaps more than one calendar year, then the year of the fumigation cycle is the year methyl bromide was applied.
Col. B: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in each fumigation cycle. (For example, if normally methyl bromide is applied and tomatoes are grown and harvested followed by peppers without an additional treatment of methyl bromide, then both tomatoes and peppers would be part of the same fumigation cycle.) See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodities produced per area.
Col. E: Price	Enter the average prices received by the users for the year and crop/commodity indicated (1997-2000).
Col. F: Revenue	This number is calculated automatically using the values you entered in Cols. D and E. You may override the formula to enter a different revenue. Please explain why the revenue amount is different in the comment section below.
Total Revenue for 1997-2000	Enter the total revenue per year by adding the revenue for all crops for that year.
Average Revenue per Year:	The average revenue per year is calculated automatically using the summary data you enter for each year.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Year Methyl Bromide was Applied	**Crop/Commodity**	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (cwt./acre)	**Price** (per unit of crop/commodity)	**Revenue** (per acre)
1997	Sweetpotato	hundredweight (cwt.)	205	$ 22.50	$ 4,612.50
1998	Sweetpotato	hundredweight (cwt.)	220	$ 19.35	$ 4,257.00
1999	Sweetpotato	hundredweight (cwt.)	240	$ 21.60	$ 5,184.00
2000	Sweetpotato	hundredweight (cwt.)	250	$ 18.08	$ 4,520.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue for 1997	$ 4,612.50
				Total Revenue for 1998	$ 4,257.00
				Total Revenue for 1999	$ 5,184.00
				Total Revenue for 2000	$ 4,520.00
				Average Revenue Per Year	$ 4,643.38

Comments: Source: NASS
NOTE: California reports what shipper receives for commodity; grower receives about 25% less. Above figures have been adjusted.

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Worksheet 2-C. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 2001

If a consortium is submitting this application, the data for this table should reflect the **representative user** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 2001when using methyl bromide. Post-harvest users may modify this form to accommodate differences when providing gross revenue data. If 2001 was not a typical year for the individual or for the representative user of a consortium, the applicant may provide additional data for a different year. However, all applicants must complete this worksheet for the year 2001 regardless. Please explain in the comment section at the bottom of the worksheet why 2001 is not considered a typical year, if that is the case.

Col. A: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in the fumigation cycle (interval between fumigations) beginning with the treatment of methyl bromide in 2001. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the crops during the entire interval. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g. fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of methyl bromide affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor.
Col. E: Price	Enter average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Revenue	Revenue is automatically calculated using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section below.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Crop/Commodity	**Price Factors** (grade, time, market)	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per acre)	**Price** (per unit of crop/commodity)	**Revenue** (per area)
Sweetpotato	Market (supply/demand)	cwt.	230	$ 23.17	$ 5,329.10
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	$ 5,329.10

Comments: Source: NASS
NOTE: California reports what shipper receives for commodity; grower receives about 25% less. Above figures have been adjusted.

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Worksheet 2-D. Methyl Bromide - Use and Costs for 2001

If a consortium is submitting this application, the data in Cols. B, C, D, and E should reflect the *representative user* in the consortium. The data in Col. F should reflect the **actual** area treated by all users in the consortium.

If the methyl bromide is custom applied then put the cost per area in Column G and fill in the average lb ai of methyl bromide applied per area (Col B) and the Total Actual Area Treated (Col F).

If 2001 was not a typical year for the individual or for the representative user of a consortium, the applicant may provide additional data for a different year. However, all applicants must complete this worksheet for the year 2001 regardless. If you provide an additional year's data, please explain in the comment section at the bottom of the worksheet why 2001 is not considered a typical year.

Col. A: Formulation of Methyl Bromide	Enter the appropriate data in Col B-G for each formulation, if known, and/or the totals and averages for all formulations of methyl bromide. If you just enter data in the bottom row in the table (All formulations of methyl bromide), please describe in the comments, the relative usage of the various formulations, to the extent known.
Col B: Average lbs. active ingredient (ai) of Methyl Bromide Applied per Area	Enter the average pounds active ingredient (ai) of methyl bromide applied per area.
Cols. C, D, E, G: Prices and Costs	Enter the average price per pound active ingredient (ai) of methyl bromide in Col. C and the average cost of applying methyl bromide per area treated in Col. D. In Col. E, enter the average other costs per area associated with applying methyl bromide (e.g., tarps). Column G will be calculated automatically using the values you entered in columns B-E. If methyl bromide is custom applied, enter the cost per area in Col. G and fill in Cols. B and F.
Col. F: Actual Area Treated	Enter the **actual** area treated. Note: This number should be the total area treated by all users in the consortium.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G
Formulation of Methyl Bromide	**Lb. ai of Methyl Bromide Applied per Area (2001 Average)**	**Price per lb. ai of Methyl Bromide (2001 Average)**	**Cost of Applying Pesticide per Area (2001 Average)**	**Other MBr Costs (e.g. tarps, etc.) per Area (2001 Average)**	**Total Actual Area Treated in the Consortium**	**Cost per Area**
over 95% methyl bromide	165	$ 4.00	$ 40.00	$ 0.00	0	$ 700.00
75% methyl bromide, 25% chloropicrin						$ 0.00
67% methyl bromide, 33% chloropicrin						$ 0.00
50% methyl bromide, 50% chloropicrin						$ 0.00
__% methyl bromide, __% chloropicrin						$ 0.00
__% methyl bromide, __% chloropicrin						$ 0.00
						$ 0.00
All formulations of methyl bromide	165	$ 4.00	$ 40.00	$ 0.00	0	$ 700.00

Comments: MeBr was not used in 2001 due to increased price of material. Column G represents Cost per Area if MeBr was used.

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Worksheet 2-E. Methyl Bromide - *Other* Operating Costs for 2001

Do not include methyl bromide costs.

If a consortium is submitting this application, the data for this table should reflect a **representative user**.

Enter all operating costs except methyl bromide costs incurred during the fumigation cycle (interval between fumigations) beginning in 2001. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. Enter these costs in Col B for custom operations, **or** in Col C and D for operations done by user.

Submit crop budgets for each crop, if available. You may submit crop budgets electronically or in hard copy. If your costs are significantly different than the crop budgets, please explain in the comments.

Col A: Operation	Identify in Col A the operations (except methyl bromide) to which the costs apply. For growers, these operations should include but are not limited to (1) prepare soil, (2) fertilize, (3) irrigate, (4) plant, (5) harvest, (6) other pest controls, etc. You must include all other operating costs.
Col B: Custom Operation Cost	If you incur custom operation costs, enter those costs in Col. B.
Col C: Material Cost per Area	If you do not incur custom operation costs, enter the material cost per area.
Col D: Labor Cost per Area	If you do not incur custom operation costs, enter the labor cost per area.
Col E: Total Cost per Area	The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col F: Typical Equipment Used	Identify the typical equipment used for operations done by user. Please be specific, such as tractor horsepower. No cost data is required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Operation	**Custom Operation Cost per Area**	**Operation Done by User**			
		Material Cost per Area	**Labor Cost per Area**	**Total Cost per Area**	**Typical Equipment Used**
Land Prep			$ 225.00	$ 225.00	
Irrigation installation		$ 120.00	$ 140.00	$ 260.00	Drip Tape
Irrigation			$ 150.00	$ 150.00	
Hot bed cost			$ 550.00	$ 550.00	Plastic
Planting			$ 450.00	$ 450.00	Tractor/transplanter
Cultivation			$ 225.00	$ 225.00	Tractor + cult. Equipment
Weed Hoeing			$ 400.00	$ 400.00	Hoes
Chemicals		$ 100.00		$ 100.00	Aerial application
Fertilizer		$ 200.00		$ 200.00	
Harvest			$ 800.00	$ 800.00	
Storage		$ 150.00		$ 150.00	
Bin rental		$ 50.00		$ 50.00	
Fumigation	$ 300.00			$ 0.00	
Total Custom per Area	$ 300.00		**User Total per area**	$ 3,560.00	

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Worksheet 2-F. Methyl Bromide Fixed and Overhead Costs in 2001

If a consortium is submitting this application, the data for this table should reflect a **representative user.**

Enter **all** fixed and overhead costs incurred during the fumigation cycle (interval between fumigations) beginning in 2001. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle.

Col A: Cost Item	Identify in Col. A the cost items. These items should include, but are not limited to: (1) land rent, (2) interest, (3) depreciation, (4) management, and (5) overhead such as office and administration.)
Col B: Description	Please describe the cost in more detail.
Col C: Allocation Method	Please describe how you estimated the portion of total fixed cost of the farm or entity that applies to this crop/commodity.
Col D: Cost per Area	Enter the cost per area of methyl bromide treated.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D
Cost Item	**Description**	**Allocation Method**	**Cost per Area**
Land Rent		Actual area planted	$350.00
Water Tax		Fixed amount	$25.00
Water Cost		Actual amount used	$125.00
Management			$100.00
Depreciation			$125.00
Accounting/Bookeeping			$15.00
		Total	$740.00

Comments:

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each research study you use to evaluate a single methyl bromide alternative. Use additional pages as need.

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative, second research study, label the worksheet 3-A(1)(b). For the first alternative, third research study, label the worksheet 3-A(1)(c). For the second alternative, first research study, label the worksheet 3-(A)(2)(a). For the second alternative, second research study, label the worksheet 3-(A)(2)(b).

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

Summarize each of the research studies you cite in the Research Summary Worksheet.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet of relevant treatments should be provided for each study reviewed.

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible alternative pest control regimens for various crops, which can be found at http://www.epa.gov/ozone/mbr or by calling 1-800-296-1996.

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as application rates, application intervals, pest pressure, weather conditions, varieties of the crop used, etc. All results should be included, regardless of outcome. **You must submit copies of each study to EPA** unless they are listed on the Agency website.

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and other websites for studies that pertain to your crop and geographic area.

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives provided by the Agency and explain why they cannot be used for your crop and in your geographic area.

Use additional pages as needed.

Alternative: None listed in US Matrix **Study:** None

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted _____
1b. Township caps _____
1c. Alternative not acceptable in consuming country _____
1d. Other (Please describe) _____

_____
_____
_____
_____

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. **Is the study on EPA's website?** **Yes** NA **No** NA

   1a. If not on the EPA website, please attach a copy.

2. **Author(s) or researcher(s)** _____

3. **Publication and Date of Publication** _____

4. **Location of research study** _____

5. **Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.**

6. **Was crop yield measured in the study?** **Yes** _____ **No** _____

7. **Describe the effectiveness of the alternative in controlling pests in the study.**

8. **Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?**

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each resear

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative,

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

Summarize each of the research studies you cite in the Research Summary Worksheet.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as applicati

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and othe

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives pro

Use additional pages as needed.

Alternative: Crop Rotation/Fallow **Study:** None

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted _____
1b. Township caps _____
1c. Alternative not acceptable in consuming country _____
1d. Other (Please describe) X
This alternative is not economically feasible. Land owners will not allow land to be taken out of production.

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. **Is the study on EPA's website?** **Yes** _____ **No** X

   1a. If not on the EPA website, please attach a copy.

2. **Author(s) or researcher(s)** _____

   There are no relevant research studies for this not-in-kind alternative.

3. **Publication and Date of Publication** _____

4. **Location of research study** _____

5. **Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.**

6. **Was crop yield measured in the study?** **Yes** _____ **No** _____

7. **Describe the effectiveness of the alternative in controlling pests in the study.**

8. **Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?**

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Worksheet 3-B. Alternatives - Pest Control Regimen Costs for Alternative: None Applicable

If a consortium is submitting this application, the data for this table should reflect a **representative user.**

Col. A: Name of Product and Non-chemical Control	Enter all alternatives and non-chemical pest control that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the pesticides that replace methyl bromide for the entire interval. Do not include pesticides that are used along with methyl bromide--enter only the additional pest control if methyl bromide were not available. If someone other than the applicant previously benefited from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Target Pests	Be as specific as possible regarding the species or classes of pests controlled by the active ingredient or pesticide product.
Col. C: Active Ingredients	Use one row for each active ingredient (ai). For example, if a product contains 2 ai's use 2 rows for that product. Once a row is completed for a given product, then only Col. B (if applicable), C, and E need to be completed for additional rows regarding the same product.
Col. D: Formulation	Enter the formulation or the % of active ingredient.
Col. E, F, G: Application Rate	As a cross check, EPA is requesting both the amount of active ingredient in Col. E and product applied per area in Col. F. Indicate the unit of the product in Col. G.
Col. H, I, J: Prices and Costs	**Use 2001 prices and costs.** If the product is custom applied you may enter the total cost in the last column (Col. M) and override the formula. If a pesticide is applied by the user, enter the price of the product in Col. H and the cost of applying it in Col. I. Enter any other costs associated with **applying** this product in Col. J, specifying what they are in the comments section at the bottom of this sheet.
Col. K: Area Treated	Enter the area receiving at least one application of the pesticide.
Col. L: # of Applications per Year	Enter the number of applications in a fumigation cycle comparable to methyl bromide for this alternative pest control regimen. Since this number is an average, it does not need to be a whole number.
Col. M: Cost per Area in 2001 Dollars	Enter the cost per area in 2001 dollars. Col. M will be calculated automatically using the data you have entered for a chemical pest control, or, the formula in Col. M can be overridden if the cost per area is known because the product was custom applied.
Non-chemical Control	Enter data near the bottom of the form. Identify the control in Col. A. Enter the target pests in Col. B. Describe the non-chemical pest control Col. B-L. Enter the costs in Col. M in 2001 dollars.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Name of Product	**Target Pests**	**Active Ingredients (ai) in Product**	**Formulation of Product**	**Application Rate**			**Price per Unit of the Product**	**Cost of Applying Pesticide per Area**	**Other Costs per Application**	**Area Treated at Least Once**	**# of Applications per Year**	**Cost per Area (2001$)**
				lbs. ai per Area per Application	**Units of product per Area per Application**	**Product Unit (e.g., lbs., gals)**						
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
Non-Chemical Pest Control	**Target Pests**	**Description**										**Cost/area**
											Total	$ 0.00

Comments:
If you do not have the quantitative data for additional crops grown on the same land, please indicate so in the comment section.

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Worksheet 3-C. Alternatives - Crop/Commodity Yield and Gross Revenue for Alternativ

None in US Matrix

If a consortium is submitting this application, the data for this table should reflect a *representative* user.

The purpose of this worksheet is to identify the gross revenue for units (crop, commodity, structure) when using an alternative compared to gross revenue when using methyl bromide. Post-harvest and structural users may modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Crop/Commodity	Enter all crops/commodities that can be grown/treated during the same interval of time comprising a methyl bromide fumigation cycle. Please discuss changes in crop cycles resulting from alternative use in the comments. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter in Col. B any factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g., fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of alternatives affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for your crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor identified.
Col. E: Price	Enter the average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Gross Revenue	In the electronic version, revenue is automatically calculated below using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Crop/Commodity	**Price Factors** (grade, time, market)	**Unit of Crop/Commodity** (e.g., pounds, bushels)	**Crop/Commodity Yield** (Units per area)	**Price** (per unit of crop/commodity)	**Revenue** (per area)
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	$ 0.00

Comments:

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Worksheet 3-D. Alternatives - Changes in Other Costs for Alternative: None in US Matrix

If a consortium is submitting this application, the data for this table should reflect a *representative user*.

Enter data only for costs (other than the cost of alternative pest control) that change as a result of using the alternatives instead of methyl bromide. Enter the whole cost, not just the incremental changes. Enter the cost in Col. B for custom operation costs, **or** in Col. C and D for operations done by user.

Col. A: Operation or Cost Item	Identify the operations or cost items that change as a result of not using methyl bromide.
Col. B: Custom Operation Cost	Enter custom operation costs that change in Col. B.
Col. C, D, E: Costs per Area	Enter in Col. C and D, material and labor costs per area that change for operations done by user. The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col. F: Typical Equipment Used	Identify changes in the typical equipment used by the user as a result of not using methyl bromide. Please be specific such as tractor horsepower. No cost data are required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Operation or Cost Item	**Custom Operation Cost per Area**	**Operation Done by User**			**Typical Equipment Used**
		Material Cost per Area	**Labor Cost per Area**	**Total Cost per Area**	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
Total Custom per Area	$ 0.00		**User Total per area**	$ 0.00	

Comments:

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Worksheet 4. Alternatives - Future Research Plans

Please describe future plans to test alternatives to methyl bromide. (All available methyl bromide alternatives from the alternatives list should have been tested or have future tests planned.) There is no need to complete a separate worksheet for future research plans for each alternative - you may use this worksheet to describe all future research plans.

1. **Name of study:** Fumigation and Cover Crop Trial on Sweetpotatoes

2. **Researcher(s):** Scott Stoddard, University of California Cooperative Extension, Merced County

3. **Your test is planned for:** Ongoing - began December 2001

4. **Location:** Merced County, California

5. **Name of alternative to be tested:**

Cover crops (radish, vetch, barley) alone and in combination with chemicals (Vapam, Telone II, Mocap).

6. **Will crop yield be measured in the study?** Yes X No _____

7. **If additional testing is not planned, please explain why. (For example, the available alternatives have been tested and found unsuitable, an alternative has been identified but is not yet registered for this crop, available alternatives are too expensive for this crop, etc.)**

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Worksheet 5. Additional Information

1. How will you minimize your use and/or emissions of methyl bromide?

1a. Check all methods you will use
____ Nothing
____ Tarpaulin (high density polyethylene)
____ Virtually impermeable film (VIF)
X Cultural practices (please specify) Depth of application; compact soil after application to seal surface.

1b. Will you use other pesticides to reduce use of methyl bromide? Yes ____ No X

If yes please specify. _____

1c. Other non-chemical methods: (please specify):
Crop rotation and resistant varieties.

2. Do you have access to recycled methyl bromide? Yes ____ No X

If yes, how many pounds? _____ lbs.

3. Do you anticipate that you will have any methyl bromide in storage on January 1, 2005? Yes ____ No X

If yes, how many pounds? _____ lbs.

4. What is the cumulative amount spent to date by the user or consortium on research to develop alternatives to methyl bromide (beginning in 1992)?

$ Not Significant

5. Other investments, if any, made to reduce your reliance on methyl bromide. Describe each investment and its associated cost.

None. This is a very small and fragmented industry, making it difficult to obtain funds. Rely on University research.

6. Identify what factors would allow you to stop or reduce your use of methyl bromide (e.g. registration of particular pesticide; completion of research plan; capital outlay).

None in the forseeable future.

When do you expect these to occur? _____

7. Range of acres farmed by growers included in this application?
(insert number of users in each category)

5	0-10 acres
15	10-25 acres
15	25-50 acres
10	50-100 acres
20	100-200 acres
10	200-400 acres
3	over 400 acres

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Worksheet 5. Additional Information (continued)

8. Range of square feet of the area to which applicants included in this application will apply methyl bromide? (insert number of users in each category)

____ 0 - 5,000 sq. ft.
____ 5,001 - 10,000 sq. ft.
____ 10,001 - 20,000 sq. ft.
____ 20,001 - 40,000 sq. ft.
____ 40,001 - 80,000 sq. ft.
____ 80,001 - 160,000 sq. ft.
__80__ over 160,000 sq. ft.

I certify that all information contained in this document is factual to the best of my knowledge.

Signature _____ **Date** _____

Print Name Bob Weimer **Title** President

Information in this application may be aggregated with information from other applications and used by the United States government to justify claims in the national nomination package that a particular use of methyl bromide be considered "critical" and authorized for an exemption beyond the 2005 phaseout. Use of aggregate data will be crucial to making compelling arguments in favor of critical use exemptions. **By signing below**, you agree not to assert any claim of confidentiality that would affect the disclosure by EPA of aggregate information based in part on information contained in this application.

Signature _____ **Date** _____

Print Name Bob Weimer **Title** President

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Worksheet 6. Application Summary

This worksheet will be posted on the web to notify the public of requests for critical use exemptions beyond the 2005 phase out for methyl bromide. Therefore, this worksheet cannot be claimed as CBI.

1. Name of Applicant: Bob Weimer, President, Sweet Potato Council of California

2. Location: Livingston, CA

3. Crop: Sweet Potato

4. Pounds of Methyl Bromide Requested **2005** 450,000

5. Area Treated with Methyl Bromide **2005** 3,000 Acres **units**

6. If methyl bromide is requested for additional years, reason for request:

To continue use until viable alternatives become available. Use of MeBr has already been reduced significantly.

2006 450,000 **lbs.** **Area Treated** 3,000 acres **units**

2007 450,000 **lbs.** **Area Treated** 3,000 acres **units**

Place an "X" in the column(s) labeled "Not Technically Feasible" and/or "Not Economically Feasible" where appropriate. Use the "Reasons" column to describe why the potential alternative is not feasible.

Potential Alternatives	Not Technically Feasible	Not Economically Feasible	Reasons
Crop Rotation (follow sweetpotato with grain, then leaving field fallow during summer)		X	Significant financial loss occurs when fields are left fallow; not acceptable to land owner.